NATURE-BASED SOLUTIONS IN VOLUNTARY CARBON MARKETS

Dr. Till Pistorius & Benjamin Schwarz

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1. Introduction

study objectives & method

- **client: GIZ Sector Programme for Supporting the Alliance for Development and Climate**
  - initiated in 2018, currently transformed into a foundation
  - objective: engaging the private sector in projects with synergetic development and climate mitigation impacts
  - more than 700 members so far

- **study objective: to inform members of the alliance on the role of NbS in voluntary carbon markets and standards, to assess barriers for upscaling and provide recommendations**
  - study period: August – end November 2020
  - desk-study, based on own experience, literature & expert interviews

Structure of the study … and this presentation

1. Introduction – study objectives & method
2. Definition „Nature-based Solutions“ (NbS)
3. The role of standards for NbS
4. Status Quo: NbS in voluntary carbon markets
5. Barriers for implementation & upscaling
6. Preliminary recommendations

Summary & Conclusion

Foto: in Richtung Bealanana, Madagaskar; © Telina RANRIANARY für UNIQUE

2. Definition der „Nature-based Solutions“ …

“actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits” (IUCN)

- **study definition**

nature-based solutions with significant GHG mitigation potential

- **Considered NbS categories**

1. forests
2. agriculture & grasslands
3. wetlands

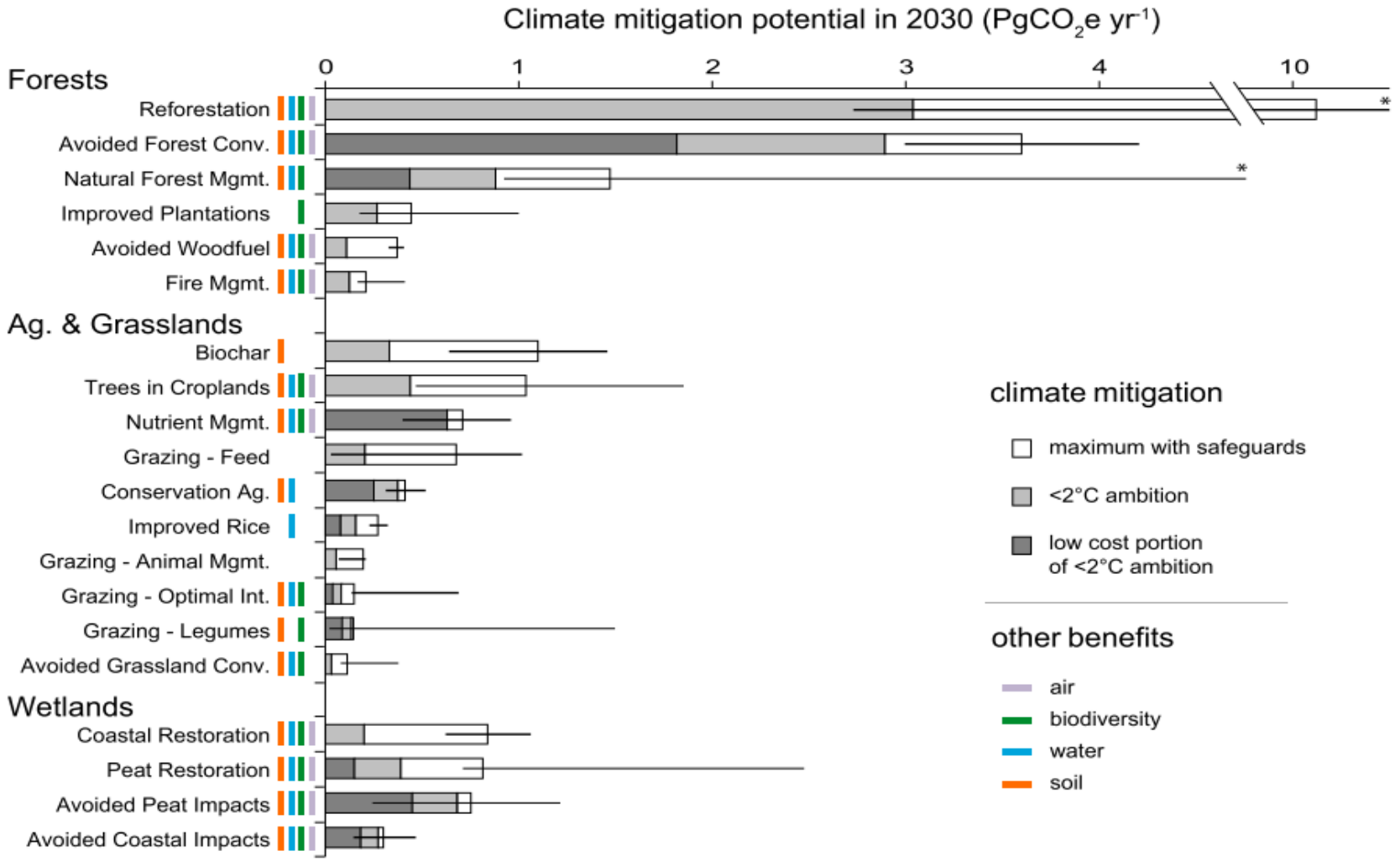
not considered:

- carbon capture & storage (CCS)
- fertilization of oceans
- other NbS (e.g. urban greening)

- early development
- no certification method
- expensive
- high / unclear risks

2. Mitigation potential of different NbS by 2030

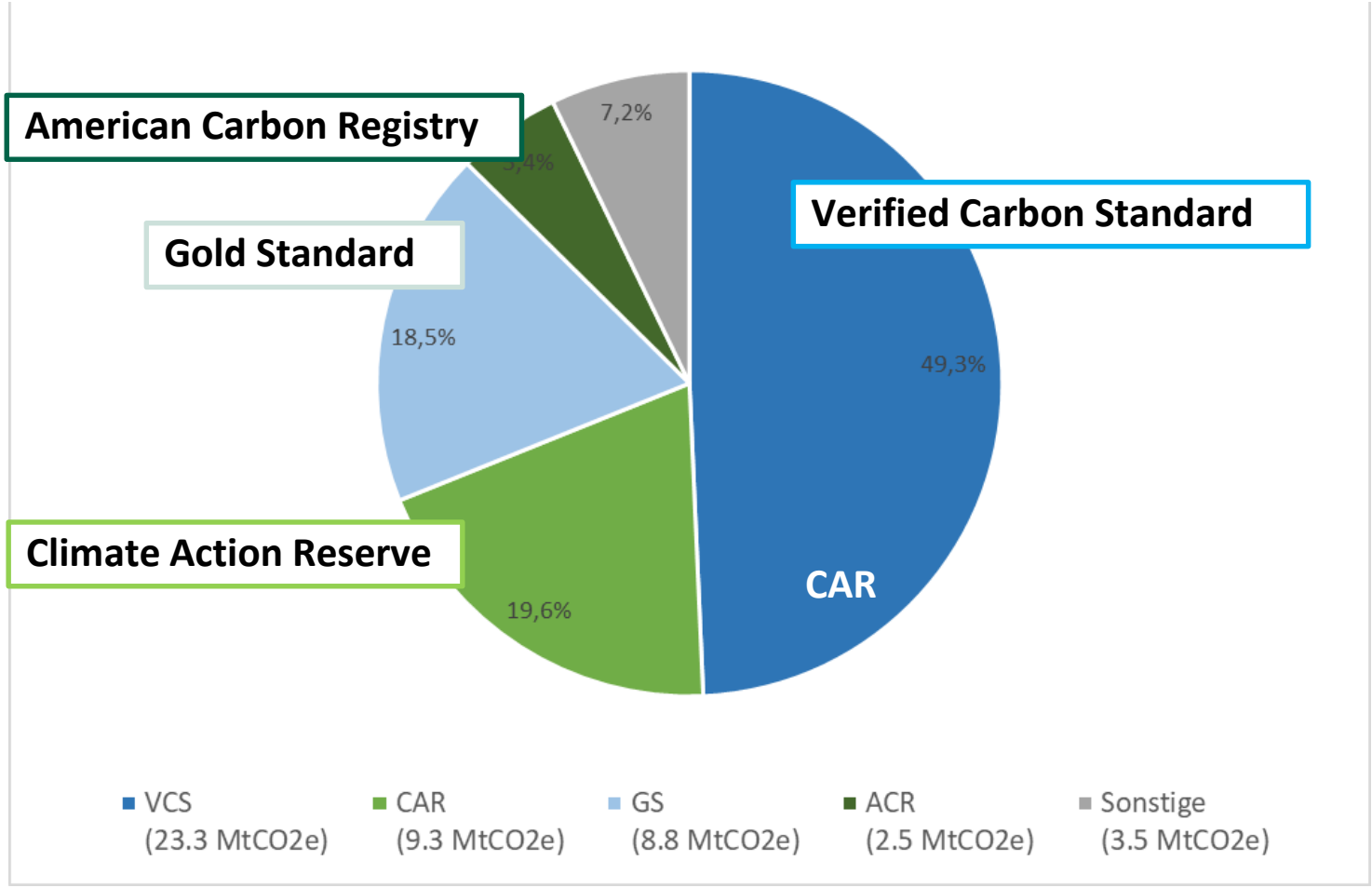
in Petagram (1 Pg = 1 Mrd. Tonnen)



Source: Griscom et al 2017

3. Main standards for NbS in voluntary markets I

based on credits traded in 2016, only >5% market share



Source: UNIQUE adaptiert von ForestTrends, 2017

3. Main standards for NbS in voluntary markets II

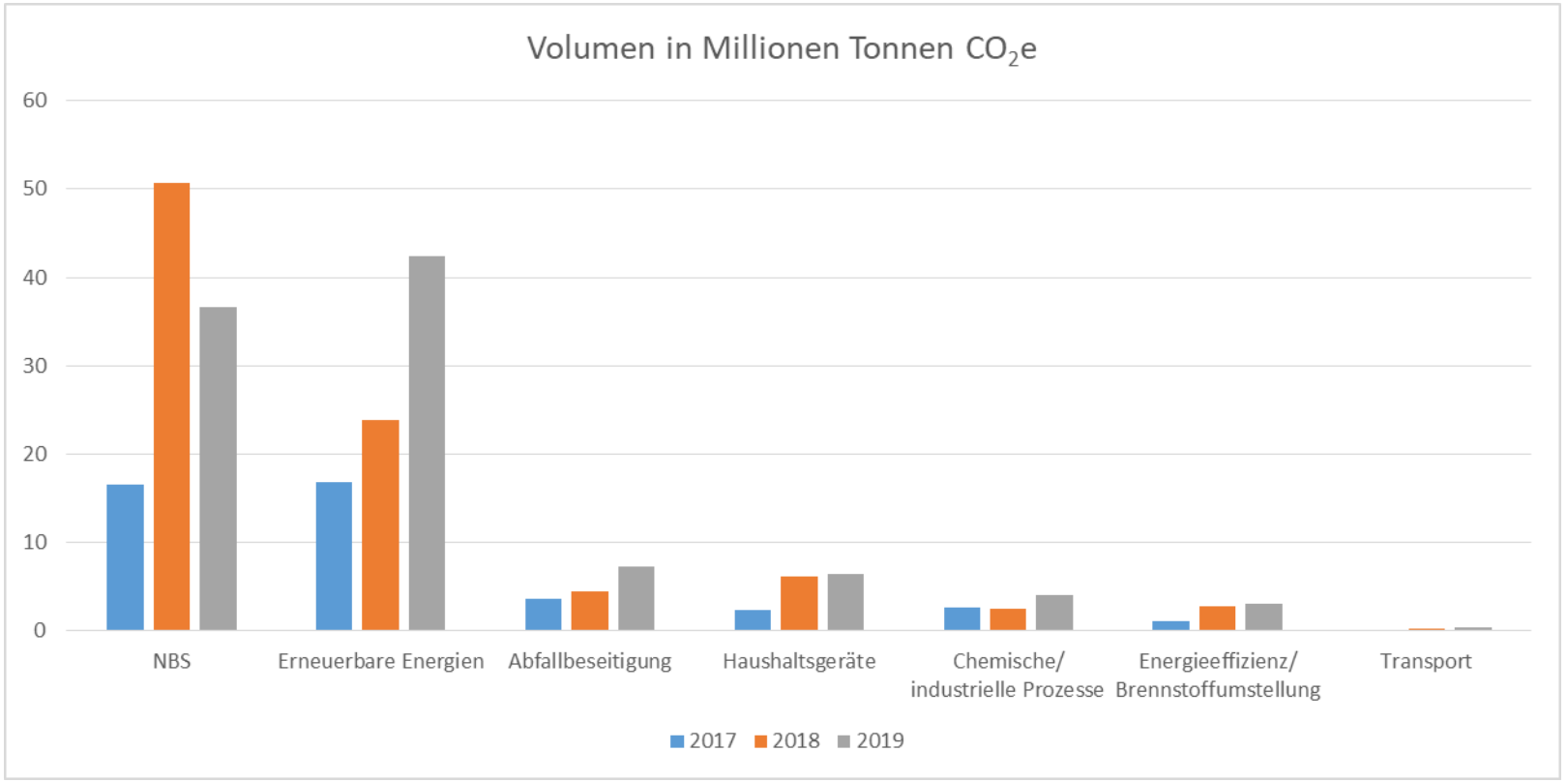
active methods for NbS certification under the main standards

		VCS	GS	CAR	ACR
Forest	Afforestation / reforestation				US
	Avoided deforestation / avoided degradation			US	
	Improved forest management			US	US
	Improved plantation management			US	US
	Reduced use of fuel wood				
	Fire management	Africa			
Agriculture and grasslands	Bio char				
	Agro-forestry			Mexico	
	Improved nutrient management			US	US
	Improved livestock & rangeland management				US
	Conservation agriculture			US	
	Improved rice production			California	
	Avoided grassland conversion			US, CAN	US
wetlands	Coastal restoration				US
	Peatland restoration				US
	Coastal protection				
	Peatland protection				

SOURCE: UNIQUE, adapted from ForestTrends, 2017

4. Status Quo: NbS in the voluntary market I

NbS volumes, compared to other solutions

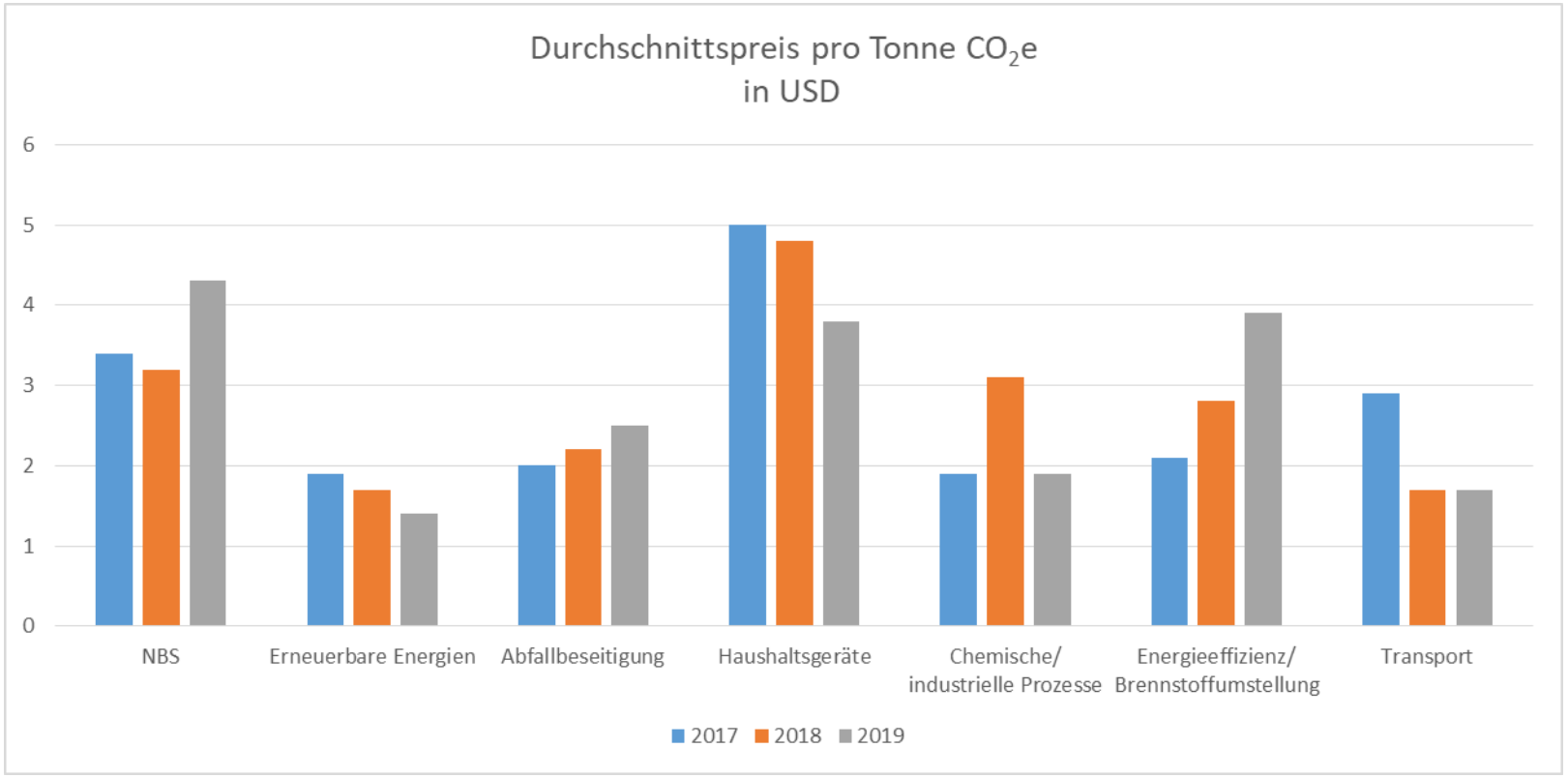


Source: UNIQUE with data from Forest Trends' Ecosystem Marketplace 2019, 2020

Method: own research in the „impact registries" of the selected standards (Sept .2020)

4. Status Quo: NbS in the voluntary market II

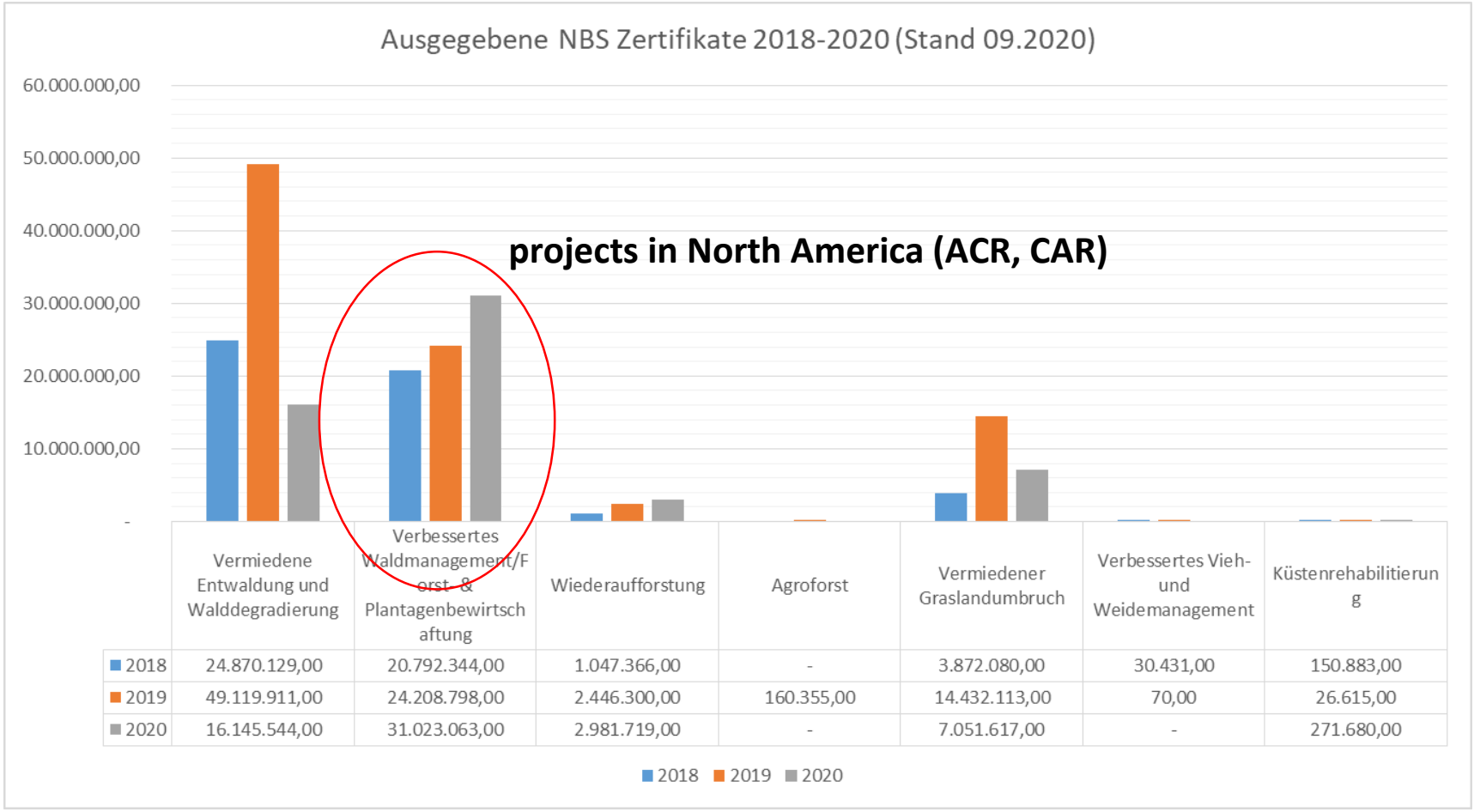
NbS average price, compared to other solutions



Source: UNIQUE with data from Forest Trends' Ecosystem Marketplace 2019, 2020

4. Status Quo: NbS in the voluntary market III

NbS in detail – comparison of different NbS



	Vermiedene Entwaldung und Walddegradierung	Verbessertes Waldmanagement/Forst- & Plantagenbewirtschaftung	Wiederaufforstung	Agroforst	Vermiedener Graslandumbruch	Verbessertes Vieh- und Weidemanagement	Küstenrehabilitierung
2018	24.870.129,00	20.792.344,00	1.047.366,00	-	3.872.080,00	30.431,00	150.883,00
2019	49.119.911,00	24.208.798,00	2.446.300,00	160.355,00	14.432.113,00	70,00	26.615,00
2020	16.145.544,00	31.023.063,00	2.981.719,00	-	7.051.617,00	-	271.680,00

source: UNIQUE based on „impact registries“ (22.09.2020)

5. Barriers for implementation & upscaling I

Supply side (project developers & implementing organizations)

Economic barriers

- low prices for voluntary carbon credits
- high transaction costs → prevents (certification of) small & medium projects (e.g. A/R projects < 1,000 ha)
- cash-flow: high up-from costs (& often long payback periods)
- "vintage" problem: depreciation of older credits

Technical barriers

- Additionality: complicated constructed argumentation
- missing methods (e.g. bio char)
- setting up smart and functioning systems for MRV (robust & efficient & capable to monitor carbon stock changes in different pools

5. Barriers for implementation & upscaling II

Supply side (project developers & implementing organizations)

Barriers related to technical capacities

- need for large project areas – many stakeholders
- time & resources for sound project development & implementation: consultation, capacity development of local implementing organizations
- competition for sites (e.g. food security)

Political barriers

- ER activities at different levels, but no “nesting”: national / NDC, jurisdictional programs, voluntary market projects

  → double-counting / double-claiming - lack of clarity, registries & guidance
  → uncertain ownership of carbon rights
- unclear land use rights & tenure in countries with large potential for NbS
- lack of regulation in countries – e.g. interested US state agencies

5. Barriers for implementation & upscaling III

Demand side (buyers / investors)

Financial / investment / market barriers

- investment security: carbon rights / double counting - double claiming issue
- high transaction costs
- market complexity, intransparent market
- complexity regarding additionality, leakage, permanence
- In Europe: high implementation costs

Other barriers

- Fear of reputation loss through bad or poorly implemented projects
- controversial debate on „offsetting“

→ science-based target initiative: offsets only complementary to other emission reduction efforts

6. Preliminary recommendations

- clarity on relationship and role of voluntary carbon projects for NDCs and jurisdictional ER programs
  - article 6 PA? → solutions for investor security on carbon rights and avoiding double counting / double claiming → national rules?
  - commitment / positioning on voluntary markets (including Germany)
- technical cooperation: further enhancing the „enabling environment“ for private sector investments in NbS projects
- Standards / certification
  - develop missing methods, e.g. for biochar
  - efforts to reduce transaction costs & certification solutions for smaller projects, and projects in Europe
  - pragmatic approaches, esp. for “additionality” (e.g. penetration rate)
- Allianz: matching good projects & investors → success stories!

Summary & conclusions I

main study findings

- Market was relatively stable in recent years, but recently notably increasing demand
- NbS among most demanded projects, but
  - prices remain low and vary
  - not all NbS are represented, even though methods exist for most NbS
- market focus on afforestation & reforestation and REDD+, very few projects in agriculture & grasslands or wetlands NbS
- "supply" of NbS projects reacts inert
  - prices likely to increase
  - buyers can either develop own projects or will turn to alternatives
- higher prices make project development more attractive: opportunities for NbS in agriculture, grasslands and wetlands

Summary & conclusions II

main study findings

- great momentum for NbS, but voluntary carbon market is still in its niche
- standards & certification
  - crucial role to ensure quality, but are perceived to add to complexity
  - no active methods available yet for reduced fuel wood use or biochar
  - dominant role of VCS: for most NbS outside North America no choice between standards, wetland projects only certifiable by VCS
- different barriers prevent unfolding: political uncertainty (UNFCCC art. 6) & high upfront / transaction costs
- investors & project developers need clarity and investment security (governments, standards)

Schnewlinstr. 10
79098 Freiburg, Germany
Tel: +49 761 208534 – 0

unique@unique-landuse.de
www.unique-landuse.de

3. Gängige Zertifizierungsstandards NBS

Kennzahlen

	Verified Carbon Standard (VCS)	Gold Standard (GS)	Climate Action Reserve (CAR)	American Carbon Registiry (ACR)
Produzierte CO_2-Zertifikate (bis 2020)	▪ 503 Mio.	146 Mio.	157 Mio.	159 Mio.
Anzahl Projekte (2019)	1.639 registrierte Aktivitäten	▪ 1.249 registrierte Aktivitäten	▪ 274 registrierte Aktivitäten	▪ 122 registrierte Aktivitäten
Durchschnittspreis	▪ 2.71 $/$tCO_2e$ (2018)	▪ 4.6 $/$tCO_2e$ (2016)	▪ 3.0 $/$tCO_2$ (2016)	▪ 4.7 $/$tCO_2e$ (2016)
Kostenschätzung*	$ 52,900	$ 140,500	$ 98,500	$ 71,000

* Transaktionskosten für Zertifizierung eines hypothetischen Projekts von insgesamt 400.000 tCO2e über 20 Jahre OHNE Entwicklungskosten

UNIQUE adaptiert von ForestTrends, 2017

4. Status Quo: NbS am freiwilligen Markt

Was ist am Markt vertreten?

	VCS	GS	CAR	ACR
WALD				
Wiederaufforstung				US
Vermiedene Entwaldung und Walddegradierung			US	
Verbessertes Naturwaldmanagement			US	US
Verbesserte Forst–/Plantagenbewirtschaftung			US	US
Feuermanagement	Afrika			
AGRAR– und GRÜNLAND				
Agroforst			Mexico	
Verbessertes Nährstoffmanagement			US	US
Verbessertes Vieh– und Weidemanagement				US
Konservierende Landwirtschaft			US	
Verbesserter Reisanbau			Kalifornien	
Vermiedener Graslandumbruch			US, CAN	US
FEUCHTGEBIETE				
Küstenrehabilitierung				US
Moorrenaturierung				US
Küstenschutz				
Moorschutz				

Nicht alle NbS, die zertifizierbar sind, sind am Markt vertreten